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CENTER FOR NONLINEAR DYNAMICS OF THE BRAIN(U)
CALIFORNIA UNIV BERKELEY DEPT OF PHYSIOLOGY-ANATOMY
W FREEMAN 30 SEP 87 AFOSR-TR-87-1565 AFOSR-86-0271

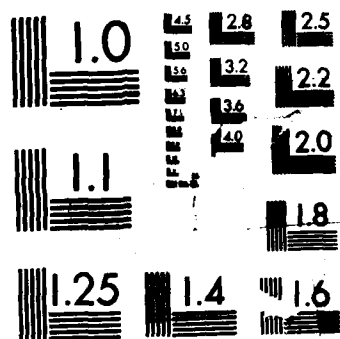
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MICROCOPY RESOLUTION TEST CHART
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19. ABSTRACT (Continue on reverse if necessary and identify by block number)			
Data collection and analysis equipment were purchased to support research on the nonlinear dynamics of human brain electrical activity. The equipment was installed and is currently fully operational.			
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FINAL REPORT

→ The Center for Nonlinear Dynamics of the Brain (CNDB) studies nonlinear dynamics of large masses of nerve cells in animal and human brains as the basis for explaining the self-organization of goal-directed cognitive behaviors. We believe that this approach to the study of mass neural action will be a basic method of the neurophysiology of the twenty-first century.

Our research has application to clinical neurology and psychiatry, to the measurement and enhancement of human mental capabilities and to the design of self-organizing, pattern recognition computer systems.

By extending techniques and models derived from the paleocortex to animal and human neocortex, a deeper understanding of the neural basis of goal-directed higher brain functions will emerge. The practical consequences of this enhanced knowledge will be better diagnosis of neurologic and psychiatric diseases. It also will result in the ability to predict decrements in higher brain functions consequent to illness, fatigue or drugs. The new models for globally parallel, self-organizing systems which result from this research also will be directly relevant to the design of VLSI architectures for pattern recognition. *Keywords: mathematical modeling; anatomical modeling* →

This URIP grant has provided brain electrical recording and analysis equipment to extend the CNDB's capabilities. The equipment purchased is the same as was described on page 3 of AFOSR Grant 86-0171, namely: (1) MASSCOMP Data Acquisition, Experimental

Control and Analysis System; (2) Pertec Streaming Tape Drive; (3) Super Eagle 10" Disk Drives (3); (4) Bioelectric Systems 64-channel amplifier system; and (5) EEGSL Data Analysis System.

The equipment was installed in the CNDB's human research laboratory in San Francisco for use in studies of higher brain functions. The equipment was installed, tested and approved for use. It is maintained by laboratory technical personnel.

A research proposal has been submitted to the National Institute of Mental Health to fund personnel to use this equipment in furthering the research aims outlined above.



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Item, Description	Vendor	Actual Cost
Disk Drives, 689MB Mountable Winchester All cabling and manuals included	Systems Industries Milpitas, CA 95035	\$ 26,459.70
Masscomp MC 5700 30 Slot Dual Processor System	Masscomp San Jose, CA 95110	\$106,502.60
EEG Data Analysis System, Model 1A Binaries to run under Masscomp	EEG Systems Laboratory San Francisco, CA 94103	\$ 45,000.00
Pertec Tape Drive	Eakins Associates Mt. View, CA 94041	\$ 2,800.00
½" Tape Controller	Masscomp San Jose, CA 95110	\$ 2,992.07
Sweep Function Generator	Zack Electronics San Francisco, CA 94102	\$ 662.00
Oscilloscope, Amplifier & Probe	Tektronics Concord, CA 94524	\$ 2,925.11
64-Channel EEG Amplification System	Bioelectric Instruments	\$ 26,220.00

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